

# **ENVIRONMENTAL ASSESSMENT**

**PREPARED FOR:**

**CAMERON SPRINGS, LLC, GRAVEL PIT**

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
OPENCUT PERMIT NUMBER CSL-001**

Submitted By

Tetra Tech  
Power Block Building  
7 West 6th Avenue, Suite 612  
Helena, MT 59601

(406) 442-5588

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## **1.0 INTRODUCTION**

Cameron Springs, LLC (Cameron Springs) obtained a Montana Department of Environmental Quality (DEQ) Opencut Permit, #CSL-001, dated May 6, 2008, to mine sand and gravel on 76.1 acres at the southeast corner of South Alaska Road and East Cameron Bridge Road, in the NW ¼ and NE ¼ of Sec 19, T1S, R5E, Gallatin County Montana. Gallatin County developed a series of conditions for operation of the gravel pit one of which was that Cameron Springs would hire Tetra Tech, Inc. (Tetra Tech) to prepare this Environmental Assessment (EA) for the project.

Cameron Springs intends to mine approximately 1,950,000 cubic yards of gravel in two phases over about 8 years.

Final reclamation would leave the area in pasture land. The reclamation bond is currently \$133,210.00.

Permit information submitted to DEQ is available for review at the Billings or Helena DEQ offices.

This EA identifies and analyzes impacts of the project and suggests mitigation measures to eliminate or lessen potential impacts.

Gallatin County will hold a public hearing on this project not later than 15 days after the county receives the EA. If you have any questions, concerns, or comments, you can submit them to Gallatin County Planning Department, 311 West Main, Room 108, Bozeman, MT 59715.

## 2.0 ENVIRONMENTAL ASSESSMENT

### Permit SPL-001, Cameron Springs, LLC, Gravel Pit

Tetra Tech prepared this EA in accordance with requirements of the **Montana Environmental Policy Act (MEPA)** Section 75-5-101 et seq., Montana Code Annotated (MCA). An EA functions to identify, disclose, and analyze impacts of an action, in this case operation of a gravel pit. MEPA sets no environmental standards and provides no authority to impose conditions or mitigations beyond those allowed under applicable state laws, such as the **Opencut Mining Act**, the **Clean Air Act**, or the **Water Quality Act**. As a result, this document may disclose impacts that have no legislatively required standards (such as noise), or over which the permitting agency has no regulatory authority (such as traffic). In such instances, a company may voluntarily agree to modify its proposed activities or accept permit conditions. In this case, Cameron Springs has agreed to conditions imposed by Gallatin County (**Appendix A**). Many of these conditions appear in the “mitigation” section in the analysis of the individual resources.

This EA was developed using the best available information. Individuals, agencies, and organizations with knowledge of specific locations or conditions may possess information that was not available during preparation of this EA. As a result, Cameron Springs and Gallatin County will analyze comments submitted by the public and if warranted, compile and further evaluate additional information or data and make revisions that may be incorporated into the plan of operations.

The state law that regulates gravel-mining operations in Montana is the **Opencut Mining Act**, 82-4-401 et seq., MCA. This law and its associated rules place operational guidance and limitations on a project during its life, and provide for the reclamation of land subjected to opencut mining. This law requires the operator to post a bond or other financial instrument so that DEQ has the financial capability to reclaim a mined site to its approved, post-mining land use if the operator is unable or unwilling to do so. In addition, the operator must obtain all other regulatory permits and approvals that are required to conduct operations at the site. This project would require a road access permit, air quality permit, and a stormwater discharge permit.

**Project Name:** Cameron Springs Gravel Pit

**Proponent:** Cameron Springs, LLC, Gravel Pit

**Location:** The NW ¼ and NE ¼ of Section 19, Township 1 South, Range 5 East.

**County:** Gallatin

**Type and Purpose of Action:** Cameron Springs received a permit to operate an opencut sand and gravel mine pit located in Gallatin County, about 2 miles south of Belgrade (**Figure A**). Access is from Gallatin County’s East Cameron Bridge Road (**Figure C**). Of the 76.1 permitted acres, approximately 60.6 acres could be mined in two phases. Fewer acres would be mined if the decision were made not to mine the facilities area next to East Cameron Bridge Road (**Figure C**). At the conclusion of mining, the area would be reclaimed to pasture with 5:1 slopes and seeded with an appropriate mixture of pasture grass seed. Reclamation of the Phase 1 area would begin concurrently with mining the Phase 2 area.

## **History of the Proposed Action:**

The site was originally pasture land that has most recently been used for grazing horses and has been permitted by the DEQ for operation of an opencut gravel mine.

## **Description of the Proposed Action**

Cameron Springs proposes to mine about 60.6 of the 76.1 acre site in two phases. After construction of the access entering onto East Cameron Bridge Road, an interior road would be developed to provide access from the entrance to the northeast corner of the property. Phase 1 would begin in the northeast corner of Lot 2 of the minor subdivision with the stripping of the topsoil and overburden (**Figure C**). This material would be used for berms to provide visual and noise shielding along the north and east sides of the excavation. Phase 1 would mine 18.6 acres.

The berms would be seeded with drought resistant, arid landscaping and a screening vegetation plan would be developed. The northeast corner would be mined to a depth of about 20 feet below the existing ground surface by benching the excavation about 10 feet at a time using a 3:1 slope. The depth would vary to remain above the seasonal high groundwater level. The work would be done with rubber tired loaders and would take about one year to complete. A scale, small dozer, front-end loaders and a portable crusher would be used in this phase.

Phase 2 would involve excavating to the west and moving the crusher to the west. Phase 2 would last from year 3 or 4 through year 8 with all mining kept above the seasonal high water level. At the beginning of Phase 2, the operator would make the decision to either mine out the 200 foot wide facilities area adjacent to East Cameron Bridge Road (**Figure C**) or immediately begin mining to the west. Reclamation of the Phase 1 area would begin concurrently with Phase 2 mining.

Normal operations would include mining, crushing, loading, and fueling. Normal hours of operation would be from 7 a.m. to 7 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday. The Saturday operation would only include maintenance and hauling, with no crushing. There would be no operations on Sundays, Thanksgiving or Christmas.

Topsoil and overburden berms about 4 to 8 feet high would be along the east and north sides of the property near the exterior edge of the buffer zone. The berms would be planted with drought resistant, arid landscaping.

**Access:** Access would be from East Cameron Bridge Road about 300 feet east of the intersection with South Alaska Road. An un-improved gravel road along the north boundary of the property would connect the entrance to the mining and stockpile areas (**Figure C**).

**Surrounding Land Use:** There is one residence and the Spanish Peaks gravel mine across East Cameron Bridge Road to the north, residential and agricultural property to the west, agricultural property to the south and one residence and agricultural property to the east.

**Traffic:** Other than delivery to local construction sites, truck traffic leaving the site would turn left (west) on East Cameron Bridge Road, then right (north) on South Alaska Road. Traffic estimates are based on mining 1,950,000 tons of gravel over eight years, operating about 311 days per year. The maximum number of vehicle trips if gravel is hauled in 10 yard trucks is expected to be about 48,750 per year (**Table 1**).

**Table 1**  
**Estimated Truck Traffic**

<b>Total Gravel Tonnage</b>	<b>Average Tons per Year</b>	<b>Average Trucks per Year</b>	<b>Average Tons per Day</b>	<b>Average Trucks per Day</b>	<b>Average Trucks per Hour</b>
1,950,000	243,750	48,750 (24,375 loaded, 24,375 empty)	784	156 (78 loaded, 78 empty)	13

It is estimated that 95% of the trucks would go north on South Alaska road then northwest to Jackrabbit Lane and 5% would go south on South Alaska Road to deliver to local construction sites (**Figure A**). Of the trucks traveling on Jackrabbit Lane, it is estimated that 65% would go to I-90 and 30% toward Four Corners/Big Sky.

**Hazardous Waste:** Fuel would be brought to the site in mobile tanker trucks that do not require secondary containment. There would be no permanent fuel storage on site.

**Reclamation:** The final reclamation plan calls for pasture with undulating slopes and bottom land vegetated with appropriate species of pasture grasses. The slopes would be no greater than 5:1. Backslopes would be scarified or disked before topsoiling if needed and topsoil would be disked prior to seeding. At the landowner's request, there would be two stockpiles left for the landowner's use – 5,000 cubic yards of 3-inch minus base course material and 5,000 cubic yards of 1-inch minus top course material. At the landowner's request, 200 feet of the internal road from the East Cameron Bridge Road to the pit would be left in place. The reclamation bond for this permit is \$133,210.

**Scoping Comments and Concerns:** Cameron Springs mailed resident notification letters to landowners located within 1,000 feet of the proposed permit site on October 16, 2007. There could be concerns about:

- Water Use, Quality and Quantity
- Dust and Air Quality
- Aesthetics, Noise, Light, Hours of Operation
- Traffic Safety and Highway Impacts
- Property Values

For a discussion of potential impacts to surface water, well water levels, and water rights please see *Section 3.2–Geology* and *Section 3.3–Water* for baseline information and possible impacts to surface water and groundwater.

For concerns that operation of the facility would produce dust and have a negative effect on air quality, please see *Section 3.4–Air Quality* for discussion of air quality permits, emission limits, health, and fugitive dust.

For a discussion of concerns that operation of the pit would have a negative effect on aesthetics, visuals, noise, and light, and may operate well past normal business hours, please see *Section 3.9–Aesthetics* for discussion of these issues.

For concerns that operation of the facility would increase traffic in the area and may increase accidents, please see *Section 3.12–Health and Human Safety* for a discussion of traffic impacts.

For a discussion of potential impacts operation of the mine would have on property values, please see *Section 3.22–Other Economic Issues* for a discussion of how gravel pits may affect property values.

### **Alternatives Considered:**

- A.** No Action Alternative: Under this alternative Cameron Springs would not mine the site. The land would remain as pasture until other uses of the land were proposed and implemented. Cameron Springs has a valid permit to mine at this site; therefore, this alternative does not fulfill the purpose of the proposed project. Because gravel consumption in the area is expected to continue as a result of increasing population, if gravel is not mined at this site it would be mined from other nearby sources.
- B.** Proposed Action: Please see the detailed description of the Proposed Action, above.
- C.** Modified Alternative: In the resource sections “*Resources, Potential Impacts and Mitigation Measures*,” the EA describes mitigations for potential resource impacts. If this alternative is chosen, these mitigations would be incorporated into the operations plan. Public and agency comments on the EA will be reviewed and these or additional mitigations may be proposed as part of this alternative.



### 3.0 IMPACTS ON THE PHYSICAL ENVIRONMENT

#### 3.1 RESOURCES, POTENTIAL IMPACTS AND MITIGATION MEASURES

This section is the heart of the EA. It addresses the 22 resource areas normally considered by the DEQ to assess impacts from a gravel pit project. For each resource there is a brief description of the proposed project, a description of the existing environment for that resource, potential impacts from project development, mitigations that may serve to lessen impacts, any irreversible and irretrievable commitment of the resource, and the cumulative effects of this project along with other known projects in the area.

#### 3.2 GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE

**Proposed Action:** Cameron Springs proposes to begin gravel mining operations on the property at the southeast corner of South Alaska Road and Cameron Bridge Road. The soils would be salvaged prior to mining and stockpiled in berms around the east and north sides of the site. The salvaged soils would be used in final reclamation at the completion of the mine operation.

**Existing Environment:** The proposed site lies on a bench within the alluvial valley of the Gallatin River and slopes downward to the north. Quaternary alluvium, predominantly stream laid deposits, underlie the soil and overburden in the proposed project area. The unit is identified as predominantly fluvial deposits on the hydrogeological map of the area (**Figure B**). The Quaternary alluvium consists of cobbles and gravel intermixed with sand, clay, and silt. Soil depths range from 6 to 13.2 inches, averaging about 10.8 inches, and overburden ranges from 0.0 to 16.9 inches, averaging about 7.2 inches. The thickness of the deposit is unknown but minable material was found as deep as 13.7 feet in the test holes (The deepest test hole was 13.7 feet.) (**Figure C**). Well logs show gravel as deep as the wells were drilled, about 60 feet beneath the ground surface (**Appendix B**). The site is located in an area of relatively flat, irrigated agricultural land. Ground surface elevation ranges from about 4,512 feet above mean sea level (msl) to about 4,534 feet above msl, sloping from the southwest to the northeast (**Figure B**).

**Potential Impacts:** Topsoil and overburden would be salvaged and stockpiled along the northern and eastern property boundaries. To reduce the potential for water and wind erosion the stockpiles would be seeded. Mining operations would occur in phases. *Reclamation:* The site would be reclaimed as pasture land. Reclamation on the Phase 1 area would begin during Phase 2 mining. Topsoil would be spread on the disturbed areas and be seeded with appropriate range grasses. The average annual precipitation in the area is 16 to 18 inches and the growing season is over 100 days per year. Because of the quality of the soil and the amount of available precipitation, revegetation should be successful.

**Irreversible and Irretrievable Commitments of Resources:** Some topsoil may be lost during ground disturbance. About 1.95 million cubic yards of material would be mined. Gravel resources would be permanently removed. The post-mining topography would not be the same.

**Cumulative Impacts:** There is a large gravel resource in Gallatin County being tapped by numerous sand and gravel operations throughout the Valley. Several are located or proposed for location adjacent to or within a few miles of this proposed project. The proposed operation

would add to the cumulative and permanent removal of sand and gravel in the valley as demand for these products increase as a result of new subdivisions, new homes, new commercial and industrial structures, and associated roads. The proposed change in the land use from agriculture to a gravel pit and then reclamation as pasture would be a temporary change. The change in topography would be permanent.

### **3.3 WATER QUALITY, QUANTITY AND DISTRIBUTION**

**Proposed Action:** Cameron Springs does not propose to mine into the water table. All mining would be above the seasonal high water level. Berms would keep stormwater from entering or leaving the site. No surface water discharge is anticipated.

**Existing Environment:** The proposed site is in the Gallatin River watershed of southwest Montana. The primary surface water features in the general area of the project site are the Spain Ferris Fork Ditch along the western boundary of the site and Hyalite Creek to the south and southeast. Neither would be disturbed by the mining operation. The Gallatin River, the largest surface water body in the project area, is approximately 2.5 miles SW of the proposed project site. Approximately 70 percent of the surface water flow entering the Gallatin Valley enters via the Gallatin River at the mouth of Gallatin Canyon, south of Gallatin Gateway (Hackett 1960). Other surface water flow enters from streams along the margin of the valley. Groundwater flows generally south to north. The flow in the Gallatin River varies significantly each year since it is primarily dependent upon the amount of snowpack.

*Groundwater Levels:* There are two wells on the property, one near the north border by East Cameron Bridge Road in Lot 1, and one near the east property line in Lot 2 (**Figure C**). The water table varies from 17.61 feet below ground surface (bgs) to 38.25 feet bgs at the north well and 18.97 feet bgs to 39.50 feet bgs at the east well. Water level measurements collected from September 2007 through December 2008 are shown in **Table 2**. During the period of monitoring, the highest water levels were recorded in July and September and the lowest levels were recorded in February and March. This typical summer to fall high water table results from natural snowmelt, precipitation, infiltration, and runoff, and is supplemented by flood irrigation that starts in May and June and continues until September or October.

Gallatin River discharge in cubic feet per second from January 2004 through January 2009 at the USGS gauging station located at Gallatin Gateway is shown in **Table 3**. The data indicates that mean monthly discharge on the Gallatin River has been generally less than normal discharge since May 2007. This appears to correlate with lower groundwater levels. Low precipitation years likely contributed to this downward trend.

**Table 2**  
**Cameron Springs Well Measurements (in feet below ground surface)**

Date	Depth to Water	
	Well #1 North Well	Well #2 South Well
9/26/2007	18.83	22.13
10/31/2007	20.43	23.85
11/29/2007	24.00	27.90
12/31/2007	27.72	32.20
1/30/2008	32.76	37.40
2/28/2008	38.25	39.41
4/1/2008	35.85	39.50
5/1/2008	35.15	37.69
5/27/2008	29.13	33.09
6/26/2008	22.32	22.72
7/28/2008	17.61	18.97
9/2/2008	17.67	20.75
10/1/2008	18.18	21.22
10/30/2008	19.90	22.75
12/1/2008	23.25	26.35
12/30/2008	27.35	30.70

Notes:

Green = Seasonal high water level

Yellow = Seasonal low water level

**Table 3**  
**Monthly Mean Discharge In Cubic Feet Per Second (cfs) For USGS**  
**Gauging Station 06043500 Gallatin River Near Gallatin Gateway, Montana**

Discharge, cubic feet per second (cfs),												
YEAR	Monthly mean in cfs (Calculation Period: 2004-01-01 -> 2008-01-30) Period-of-record for statistical calculation restricted by user											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	240.1	245.3	293.2	519.4	1,203	2,114	974.6	480.1	437.3	386.7	320.7	274.4
2005	255.0	247.7	261.5	385.7	1,725	2,688	1,086	540.2	398.8	389.5	340.1	272.0
2006	267.9	243.9	256.5	591.7	2,621	2,710	865.2	470.4	392.6	425.2	404.8	285.9
2007	276.0	268.7	350.9	558.7	2,018	1,825	629.9	419.3	355.3	389.7	301.5	255.1
2008	255.2	240.0	232.2	312.7	1,865	4,057	2,293	737.3	512.5			
Mean of monthly Discharge	259	249	279	474	1,886	2,678	1,170	529	419	398	342	272
** No Incomplete data have been used for statistical calculation												

Notes:

- Source: USGS Surface Water Data for Montana, National Water Information system: Web Interface, <http://waterdata.usgs.gov/mt/nwis>

*Water Quality:* Under state regulations, the quality of state waters cannot be degraded. “State waters” means a body of water, irrigation system, or drainage system, either surface or underground. Operations are not expected to impact water quality or state waters.

*Water Use:* Total maximum water use during operations for dust control and any needed irrigation of the seeded berms and plantings is estimated to be 25,000 gallons per day or less. On an annual basis this is expected to be less than 10 acre-feet pumped at less than 35 gallons per minute. Excess not used by the plants would infiltrate into the ground.

**Potential Impacts:** The water used in the mining operation would come from groundwater wells. Because of the small amount of water use, mining operations would not be expected to impact water users in the vicinity.

**Mitigation Measures:**

- Continue monthly water level measurements in the two wells to document water levels and potential impacts to groundwater from mining operations.
- Maintain a 3-foot vertical separation between the lowest level of mining and the annual high ground water level.
- Provide adequate sanitary facilities for employees on the site. These facilities must be screened from view from a public road or any existing residence.
- Prohibit surface disturbance or material or equipment storage closer than 50 horizontal feet from the centerline of the Spain Ferris Ditch.
- Employ best stormwater management practices for the operation.
- Prohibit storage of hazardous materials such as unleaded fuels on site.
- Have a written procedure for emergency spill response.
- Notify the Central Valley Fire Department regarding all emergency spill containment and evacuation plans prior to hauling material off-site.
- Provide the County Planning Department verification of recognized legal water rights or obtain legal water rights for all facets of the operations as well as post-operation/reclamation uses.

**Irreversible and Irretrievable Commitments of Resources:** The consumptive use of water would be temporary and occur only during mining operations.

**Cumulative Impacts:** Water use in the mining operation would not likely have an adverse impact on surrounding water rights holders. The Gallatin Valley continues to grow as new subdivisions and commercial developments are proposed and built. If development continues in the immediate area of the gravel pit, additional stresses would be placed on the aquifer.

However, given the high permeability of the aquifer material underlying the area, overall water level declines should not impact water users in the area.

### 3.4 AIR QUALITY

**Proposed Action:** Cameron Springs proposes to begin gravel mining operations at the northeast corner of the property located at the southeast corner of South Alaska Road and Cameron Bridge Road (**Figure A**). The soils would be salvaged prior to mining and stockpiled in berms on the north and east sides of the site. The berms would be seeded. The salvaged soils would be used in final reclamation after Phase 1 and at the completion of the mine operation. There would be excavation, screening and crushing activities as well as stockpiles of aggregate and crushed stone stored on the site. Processed material would be hauled to off-site locations in trucks.

**Existing Environment:** The air quality in Gallatin County is in attainment with federal ambient air quality standards, which were set at levels that would protect public health and welfare, (<http://www.deq.state.mt.us/AirQuality/Planning/AirNonattainment.asp>). Furthermore, the only Class 1 designated protection area in this county is Yellowstone National Park, at the southeast corner of the county, approximately 50 miles to the south. Historical use of the agricultural land and use of plows, discs, seed drills, swathers, combines, balers, etc. have always contributed to the dusty conditions in the area during summer months. Agricultural activities are exempt from the requirements to control or reduce air emissions created by these activities. There are existing gravel pit operations near the proposed location (There are about nine operations within 20-25 miles of the proposed location.).

The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found all over the United States. Criteria pollutants are particulate matter with an aerodynamic diameter of 10 microns or less (PM10), carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO2), ozone (O3), and lead (Pb). DEQ maintains three air monitoring stations for particulate matter in Gallatin County – Bozeman City Building, Belgrade ConAgra, and West Yellowstone. According to a 2007 presentation of air monitoring data airborne particulate matter less than 10 microns (PM10) in Gallatin County has consistently been less than 60 percent of the annual and daily federal regulatory standards since 1996 (DEQ 2009a). The EPA established PM2.5 standards (particulate matter less than 2.5 microns) in 1997 and revised them in 2006. According to the available data, the Belgrade area has the potential for noncompliance, as the criterion is within 15% of the NAAQS airborne PM2.5 concentrations (the particulate matter most likely to be inhaled) (DEQ 2008a).

Wood smoke is the major contributor (68%) to the overall PM2.5 mass in the Belgrade airshed during the winter months (Ward 2008).

**Potential Impacts:** The air quality in the area may be degraded to some extent due to the emissions from the proposed mine, but the activities and ambient air impact would be limited by the air quality permit required by DEQ's Air Resources Management Bureau (ARMB). DEQ has an EPA approved air quality program that meets federal standards. Permits and permit conditions are established for gravel operations to promote compliance with all applicable air

quality rules and standards, and to ensure that properties beyond the plant boundaries would be protected. These rules and standards are designed to be protective of human health and the environment. The crushing plant in the pit must have an air quality permit to operate.

*Emissions:* ARMB evaluates plant emissions, based on accepted emission inventory factors obtained from Federal and state guidance documents, and establishes appropriate limitations to ensure compliance with the NAAQS and Montana Ambient Air Quality Standards for these types of operations. The NAAQS are set at levels that are protective of human health and the environment. Air quality impacts from the proposed project would be from mining (PM), crushing (PM10), screening (PM10), material transfer (PM10), unloading (PM10), fueling (VOC), vehicles (CO, NOx, PM10), and windblown dust from roads and storage piles (PM10). Truck emissions and road dust would also be generated.

*Emissions Control:* The air quality permit would require that Best Available Control Technology (BACT) must be used on equipment operations. BACT for crushing/screening operations typically includes the use of water and water spray bars. Operational conditions would be established in the associated air quality permit to ensure that the source complies with existing air quality rules and regulations. ARMB would be responsible for assuring compliance with the conditions of the air permit. Fugitive dust is normally managed with water spray and regulated at mine sites by gauging opacity which is the measurement of visibility through a dust plume. Water would be used for dust control on the access road as well as on the crusher.

*Regulatory Oversight:* ARMB operates an air quality program that includes permitting, compliance, and enforcement staff. The air quality program staff members are available to answer any specific questions of interested parties including questions in regard to operations of a facility in a particular area, inspections and testing that may be required for the facility, and the compliance history of a facility. The ARMB responds to complaints about excessive dust and smoke, and enforces compliance with the requirements of the permits that it issues. Any failure on the company's part to comply with required permits issued by ARMB could result in enforcement actions and possible penalties under one or more statutes.

### **Mitigation Measures:**

- Obtain appropriate air quality permits from DEQ for all on-site equipment that requires a separate permit.
- Use water spray on the crusher, in the stockpile area and on interior roads to control dust.
- Use tackifiers on the topsoil stockpiles prior to vegetation establishment.
- Seed topsoil stockpiles that would remain longer than one year to reduce both water and wind erosion.

**Irreversible and Irretrievable Commitments of Resources:** None

**Cumulative Impacts:** Particulate emissions are the primary air pollutant of concern due to their affect on respiratory health in high risk individuals. Existing sources of particulate matter include upwind fugitive and process emissions from other gravel operations, industrial sources, agricultural operations, commercial development, unpaved roads, an undefined number of wood stoves, smoke from forest fires, and vehicle emissions.

### 3.5 VEGETATION COVER, QUANTITY AND QUALITY

**Proposed Action:** Topsoil and vegetation would be removed and the topsoil would be stockpiled as lands are moved into active mining. Reclamation would begin after the completion of Phase 1, concurrent with the operation of Phase 2. When reclamation is completed the entire area would be reclaimed to pasture.

**Existing Environment:** The land included in this project was most recently used for grazing horses. The property currently is infested with cheatgrass (*Bromus tectorum*). Implementation of the approved weed control plan was begun in 2007 and would continue under the supervision of the County Weed Coordinator. An appropriate seed mix would be used on the soil stockpiles and for reclamation. A literature search conducted by the Montana National Heritage Program (MNHP 2009) found three species occurrence reports for sensitive species in the area: dwarf purple monkey flower (*Mimulus nanus*) slender wedgrass (*Sphenopholis intermedia*) and small dropseed (*Sporobus neglectus*). No rare plants, habitat types, or species of special concern were identified during a ground search of the site.

**Potential Impacts:** Cameron Springs has filed, and gained approval for, a weed control plan and the plan of operations includes measures to prevent the spread of noxious weeds.

#### **Mitigation Measures:**

- Seed berms with an appropriate seed mix.
- Maintain compliance with the weed control plan approved by the Gallatin County Weed District.
- Reclaim the site according to the reclamation plan.

**Irreversible and Irretrievable Commitments of Resources:** The gravel resource would be removed from the site. Some topsoil may be lost during ground disturbance and berm construction. Cameron Springs has committed to a reclamation plan that would return the lands to its previous condition as pasture when the gravel resource has been depleted.

**Cumulative Impacts:** The lands surrounding the gravel pit site are a mix of cultivated and pasture lands, some housing, and a proposed gravel pit to the north. The vegetative community around the project is a mix of native and non-native plants, but does not include rare or sensitive plants or plant communities (MNHP 2009). Given that the site would be mined and reclaimed, the surface disturbance and changes to the vegetation where the land would be returned to pasture do not represent a long term change to the overall vegetative community of the area and

no measurable cumulative impacts to the vegetative community are likely to occur as a result of the project.

### **3.6 TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS**

**Proposed Action:** The Proposed Action would convert agricultural, open lands to an industrial use. Successful reclamation would return the site to pasture land.

**Existing Environment:** *Wildlife and Avian Resources:* The location of the proposed operation and past use of the site precludes the significant use of wildlife, although it would be expected to receive transient use by various birds, deer, and small mammals. The site is near residential housing, a gravel operation, and ranch/pastureland. A literature search conducted by the Montana National Heritage Program found one species occurrence reports for sensitive species in the area: gray wolf (*Canis lupus*) (MNHP 2009) *Aquatic Resources:* No waters of the U.S or natural waterways are on the site. A portion of the Spain Ferris Fork Ditch is along the west boundary of the site.

**Potential Impacts:** *Wildlife and Avian Resources:* Operation of a gravel pit at this site is not expected to have much impact on wildlife resources. *Aquatic Resources:* The mining operation should not affect the flows of the ditch. The plan of operations includes water retention and control measures to eliminate any discharges from the site. It is unlikely that this project would have any potential to impact aquatic resources in the short or long term.

**Irreversible and Irretrievable Commitments of Resources:** No irreversible or irretrievable impacts to fish or wildlife resources are anticipated as a result of this project.

**Cumulative Impacts:** The project would not contribute to cumulative impacts to aquatic resources in the area.

### **3.7 UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES**

**Proposed Action:** The mine would convert agricultural, open lands to an industrial use. During reclamation, the site would be revegetated and revert back to grazing land.

**Existing Environment:** The land has been most recently used for grazing horses and is surrounded by open fields, actively-grazed lands, dispersed home sites and a proposed gravel pit to the north. No threatened or endangered species, species of special concern, or identified habitat were found on the site (MNHP 2009). There are no wetlands on the site.

**Potential Impacts:** No unique, endangered, fragile or limited environmental resources were identified in the review of the existing environment, so, there is no potential for impact to these resources.

**Irreversible and Irretrievable Commitments of Resources:** The operation of the mine would not result in any irreversible or irretrievable commitments of unique, endangered, or fragile environmental resources.



**Cumulative Impacts:** The project would not contribute to cumulative impacts to unique, endangered, or fragile environmental resources in or around the project area

### 3.8 HISTORICAL AND ARCHAEOLOGICAL SITES

**Proposed Action:** The mine would convert approximately 76 acres of agricultural, open land to an industrial use. During reclamation, the site would be reclaimed to grazing land.

**Existing Environment:** According to records in the State Historic Preservation Office (SHPO 2009) there is only one previously recorded site in the vicinity of the project – Site 24GA0743, the historic Spain Ferris Ditch.

**Potential Impacts:** Because the agricultural use has disturbed the surface soil layers many times over the years, the integrity of a possible surficial site has likely been destroyed. There are no structures on the land except the Spain Ferris Fork Ditch along the west boundary of the site. It would not be impacted by the project. If fossil remains are discovered SHPO would be contacted and the site investigated.

#### **Mitigation Measures:**

- Keep surface disturbance, equipment operation and storage of materials or equipment at least 50 feet from the centerline of the ditch.

**Irreversible and Irretrievable Commitments of Resources:** If currently unknown cultural resources were not recognized prior to disturbance, an irreversible and irretrievable loss of the resource would occur.

**Cumulative Impacts:** No cumulative impacts are expected.

### 3.9 AESTHETICS

**Proposed Action:** The site is currently agricultural land. The mining plan calls for berms, to be seeded with grasses and a vegetation screening plan developed for the north and east boundaries to visually isolate the mine from passersby on the county road and the adjacent property. As excavation proceeds, the mining would be 15 to 20 feet below the existing ground level. The mine facilities would be on a bench 15 to 20 feet below the existing ground surface. Hours of operation would be 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays for maintenance and hauling. There would be no crushing done on Saturdays. The pit would not operate on Sundays, Christmas or Thanksgiving. Normal operations would include mining, crushing, hauling, maintenance, and fueling. The primary noise sources would be the mobile crusher, and diesel heavy equipment (e.g., front end loaders and haul trucks).

**Existing Environment:** *Visual Resources:* The appearance of the proposed project area is consistent with the surrounding lands. This site is a flat pasture. The existing areas around the site are agricultural and pasture land with scattered residential properties and a proposed gravel pit to the north. Access to the site would be from the north, off of East Cameron Bridge Road.

*Noise Terminology:* Noise is generally defined as unwanted sound, and can be intermittent or continuous, steady or impulsive, stationary or transient. Noise levels heard by humans and animals are dependent on several variables, including distance and ground cover between the source and receiver and atmospheric conditions. Perception of noise is affected by intensity, frequency, pitch and duration. Noise can influence people by interfering with normal activities or diminishing the quality of the environment. Noise levels are quantified using units of decibels (dB). Decibels are logarithmic values, and cannot be combined using normal algebraic addition. Humans typically have reduced hearing sensitivity at low frequencies compared with their response at high frequencies, and the “A-weighting” of noise levels, or A-weighted decibels (dBA), closely correlates to the frequency response of normal human hearing. For environmental noise studies, noise levels are typically described using A-weighted equivalent noise levels,  $L_{eq}$ , during a certain time period. The  $L_{eq}$  uses a single number to describe the constantly fluctuating instantaneous ambient noise levels at a receptor location during a period of time, and accounts for all of the noises and quiet periods that occur during that time period. The  $L_{eq}$  is similar to the average noise level during a given time period.  $L_{max}$  describes the highest instantaneous noise level during a period of time.  $L_{90}$  indicates the single noise level that is exceeded during 90% of a measurement period, although the actual instantaneous noise levels fluctuate continuously. The  $L_{90}$  noise level is typically considered the ambient noise level, and is often near the low end of the instantaneous noise levels during a measurement period. It typically does not include the influence of discrete noises of short duration, such as car doors closing, bird chirps, dog barks, car horns, etc. If a continuously operating piece of equipment is audible at a measurement location, typically it is the noise created by the equipment that determines the  $L_{90}$  of a measurement period even though other noise sources may be briefly audible and occasionally louder than the equipment during the same measurement period. The day-night average noise level,  $L_{dn}$ , is a single number descriptor that represents the constantly varying sound level during a continuous 24-hour period. The  $L_{dn}$  can be determined using 24 consecutive one-hour  $L_{eq}$  noise levels, or calculated using measured  $L_{eq}$  noise levels during shorter time periods. The  $L_{dn}$  includes a 10 decibel penalty that is added to noises that occur during the nighttime hours between 10:00 p.m. and 7:00 a.m., to account for people’s higher sensitivity to noise at night when the background noise level is typically low. The  $L_{dn}$  does not provide specific information about the number of noise events or the noise level at any particular time, but rather it represents the total sound environment during a 24-hour period.

*Noise Regulations:* There are no state or county noise regulations to govern environmental noise levels or noise generated by the project; however, federal noise guidelines apply. As a result of the Noise Control Act of 1972, the EPA developed acceptable noise levels under various conditions that would protect public health and welfare with an adequate margin of safety. The EPA identified outdoor  $L_{dn}$  noise levels less than or equal to 55 dBA sufficient to protect public health and welfare in residential areas and other places where quiet is a basis for use (EPA 1979). Although the EPA guideline is not an enforceable regulation, it is a commonly accepted target noise level for environmental noise studies. In addition to the EPA’s  $L_{dn}$  55 dBA limit, an increase in ambient noise levels can also be used to gage an area response to a new noise. If a project-related noise does not significantly increase the area’s existing  $L_{dn}$ , then little or no reaction is expected. If a project causes an increase in the  $L_{dn}$  of 5 to 10 dBA, sporadic to widespread complaints should be anticipated. An increase of more than 10 dBA may result in strong negative reaction (FTA 1995).

*Noise Level Estimations:* In gravel pits, the typical dominant noise source that determines the  $L_{dn}$  is the crusher, and typically, there are two loaders operating with the crusher (BSA 2008). Noise level calculations included the estimated effects of distance, ground attenuation and attenuation resulting from air absorption per international standards (ISO 1996). Although the calculations conservatively assume that atmospheric conditions are favorable for noise propagation, the estimated noise levels can vary significantly due to atmospheric conditions, and should be considered average noise levels, since temporary significant positive and negative deviations from the averages can occur (Harris 1998). Typically, favorable atmospheric conditions for noise propagation means that the wind is blowing from a source to a receiver at approximately 2 to 10 miles-per-hour, and a well-developed temperature inversion is in place, which typically occurs between approximately 2 hours after sundown to 2 hours after sunrise. Diesel-powered equipment, such as loaders and excavators, intermittently reach maximum noise levels,  $L_{max}$ , 85 dBA at a distance of 50 feet from the equipment (FTA 1995). Mobile crushers have been measured at  $L_{eq}$  66 dBA at 1,050 feet away from the equipment with a direct line of site from the listener to the equipment (BSA 2008). However, equipment noise can vary considerably depending on age, condition, manufacturer, use during a time period, changing distance and whether a direct line of sight is available between the equipment to a listener location. The source  $L_{max}$  and  $L_{eq}$  data are used to determine the  $L_{dn}$  based on the times of day and duration that the equipment operates. The estimated noise level of the crusher is shown in **Table 4**. If the line of sight is blocked due to topography, depth of the pit, or constructed berms, the estimated noise levels would be reduced by 6 dBA or more due to shielding. The nearest off-site residence is about 850 feet from the initial proposed crusher location, with no line-of-sight to the crusher. The predicted  $L_{dn}$  54 dBA at 0.25 miles and  $L_{dn}$  48 dBA at 0.5 miles (2,640 feet) from the crusher (**Table 4**) are less than the 55 dBA EPA guideline to protect public health and welfare in residential areas.

**Table 4**  
**Estimated Noise Levels At Various Distances for a Typical Crusher**

Project Equipment Assumptions/ Primary Noise Source(s)	Condition	Noise Level at Receiver		
		0.25 miles (1,320 feet)	0.5 miles (2,640 feet)	1 mile (5,280 feet)
•Crusher operating continuously between 7 a.m. and 7 p.m. •Two loaders that reach $L_{max}$ 40% of time between 7 a.m. and 7 p.m. (EPA 1971)	Direct line of sight between sources and listener	$L_{dn}$ 60 dBA	$L_{dn}$ 54 dBA	$L_{dn}$ 46 dBA
	Line of sight between sources and listener blocked	$L_{dn}$ 54 dBA	$L_{dn}$ 48 dBA	$L_{dn}$ 40 dBA

*Back-up alarms:* Because of their intermittent, high-pitched, impulsive sound, back-up alarms can cause high levels of annoyance and numerous complaints even at low noise levels, but have little influence on  $L_{eq}$  or  $L_{dn}$  values. Federal regulations indicate that backup alarms shall be audible above the surrounding background noise level behind the equipment, but does not specify a particular noise level (MSHA 2008). In general, back-up alarm sound levels can vary between  $L_{max}$  87 and 112 dBA at 4 feet away, depending on their volume setting, and whether the listener is to the side or directly behind a directional backup alarm. The estimated back-up alarm noise levels are summarized in **Table 5**. The directional back-up alarm levels could be between  $L_{max}$  31 and 62 dBA at 0.25 miles away. Since the closest off-site residence is within about 850 feet of the crusher, the back-up alarms could be a slight nuisance.

**Table 5**  
**Estimated Noise Levels From Back-Up Alarms**

Noise source	Condition	Noise Level at Receiver	
		0.25 miles (1,320 feet)	0.5 miles (2,640 feet)
Back-up Alarm	Direct line-of-sight	$L_{max}$ 37-62 dBA	$L_{max}$ 31-56 dBA
	Blocked line-of-sight	$L_{max}$ 31-56 dBA	$L_{max}$ 25-50 dBA

Note:

The low number of the stated noise level range indicates the noise to the side of the directional alarm, and the high number indicates the noise level directly behind the alarm.

**Potential Impacts:** *Noise:* Because most of the noise levels at the nearest off-site residence would be within the EPA guidelines for protection of human health, no noise impacts are expected except possibly from back-up alarms. *Visual Resources:* Once the soil and overburden berms are established and seeded and the vegetative screening plan is completed, mining operations would be shielded from view. However, the berms would continue to be noticeable from the roadway. The berms would not be high enough to block the view of the nearby hills, and should not represent an appreciable impact on the visual resources of the surrounding area.

#### **Mitigation Measures:**

- Use hoods, screening or direction of light so that light would not be detrimental to adjoining property owners or the neighborhood.
- Turn off lights (with the exception of limited security lighting) at the close of business each day.
- Prohibit crushing of raw materials on Saturdays and Sundays.
- Prohibit operation on Christmas and Thanksgiving.
- Only allow extended demand hours for special projects from: 6:00 a.m. to 8:00 p.m., Monday through Saturdays. Extended hours cannot exceed more than eight weeks in any six month period. Prior to commencing temporary extended hour operations operator shall notify the Belgrade Planning Department and adjacent property owners within 1,000 feet from the edge of the permitted area at least seven (7) days but not more than 30 days

prior to commencing addition operations. Notification shall be in writing via certified mail.

- Place berms or barriers along north and east permit boundaries to ameliorate noise effects, and create a vegetative buffer plan to screen the operation from view of nearby residences.
- Replace standard back-up alarms with Mine Safety and Health (MSHA)-approved, manually adjustable, ambient-sensitive, directional sound technology, or strobe light alarms. Adjustable and ambient-sensitive alarms typically limit the alarm noise to 5 to 10 dBA above the background noise, which would still typically be audible behind the equipment.
- Install high-grade mufflers on all diesel-powered equipment.
- Implement a regular maintenance schedule to ensure that equipment is operating properly.
- Enclose all pumps or other noise producing equipment in appropriate noise containment apparatus.
- Ensure blasting operations only occur upon a minimum 24-hour written notice via certified mail to all landowners within 2,500 feet of the site.
- Assure that the stockpiled topsoil and the topsoil and overburden berms are adequately seeded and irrigated, as needed.

**Irreversible and Irretrievable Commitments of Resources:** *Noise:* The change in noise would last as long as the mining operation and would not represent an irreversible or irretrievable commitment of resources. *Visual Resources:* Changes to the visual resources and scenery during active mining would be lessened by the proposed berms. Once reclamation is completed, the berm material would be spread on the disturbed land, graded and seeded to resemble the surrounding pasture lands, therefore, any impacts to visual resources would be short-lived and do not represent an irreversible or irretrievable commitment of resources.

**Cumulative Impacts:** *Noise:* Cumulative effects include noise from the construction and operation of the mine, noise from haul trucks, noise from the proposed Spanish Peaks gravel pit, and other noise sources such as traffic noise from the South Alaska and East Cameron Bridge Roads, and noise from area residential and agricultural activities. Noise due to gravel mining would continue to be the dominant noise source in the area on weekdays when the crusher is operating. *Visual Resources:* The character of the area visual landscape has evolved from primarily open pasture and agriculturally cultivated lands to include small industrial and retail businesses, and dispersed home sites. The project would not materially contribute to the cumulative impacts to visual resources in the Gallatin Valley because 1) the proposed change in land use to an active gravel pit would be a temporary action, and, 2) the disturbed land would be reclaimed to a similar use with an altered topography.

### **3.10 DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. After reclamation the land would revert to open agricultural land.

**Existing Environment:** The appearance of the proposed project area is consistent with the surrounding lands. This site is a flat pasture with some fences. Gravel resources in Gallatin County are not scarce in the area, however, some of the gravel resources are located in floodplains and development of those deposits could pose environmental problems.

Subdivisions are expanding so that it is becoming difficult to locate a gravel operation that does not abut some residences, and thus generate complaints. When gravel is used from pits located at a distance from the point of use, there are often public complaints about increased traffic and air pollution from trucks on the roads, wasting resources because of increased travel distances and increased costs of gravel products.

**Potential Impacts:** No impacts to the geology were identified, other than the removal of gravel resources and a changed topography. The limited quantity of water used for dust control should not impact the water table.

**Irreversible and Irretrievable Commitments of Resources:** About 1.95 million cubic yards of material would be mined and removed from the site. Gravel resources would be lost and the commitment cannot be reversed without refilling the excavation with imported material. The mining and removal of gravel is irreversible. According to figures submitted to the Opencut Program in annual reports, in 2002, the Gallatin County Road Department operated 9 pits and mined 25,350 cubic yards of gravel from them, mostly for maintenance of the county road system. The road department also purchased gravel materials such as asphalt, sand and some gravel, and contracted chip sealing from the private sector. The private sector operated 32 pits and mined 2,110,502 cubic yards in 2002. With an estimated population in Gallatin County of 72,000 people the average gravel usage per person was 29.3 cubic yards in 2002. Gallatin County is one of the fastest growing counties in the state with a 2006 population estimate of 80,921 people (U.S. Census 2006). Gravel operators reported that a total of 2.7 million cubic yards of aggregate was mined in Gallatin County in 2006. That is an increase of 600,000 cubic yards annually between 2002 and 2006 and an average of 31 cubic yards for every person in Gallatin County. In 2006 the average gravel use statewide in Montana was 18 cubic yards per person per year. Cameron Springs proposes to mine approximately 1.95 million cubic yards of material over the next eight years. If it were possible to mine the site rapidly enough it could service the complete gravel needs of Gallatin County for less than one year, based on 2006 usage.

**Cumulative Impacts:** The gravel resource in Gallatin County is not limited in the area. There are numerous sand and gravel operations throughout the Valley. The proposed operation would add to the cumulative and permanent removal of gravel in the valley as demand increases as a result of new subdivisions, new homes, new commercial and industrial structures, and associated roads. The proposed change in the land use from agriculture to a gravel pit is temporary. After reclamation the land could once again be used for grazing.

### 3.11 IMPACTS ON OTHER ENVIRONMENTAL RESOURCES

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** There are no known studies, plans or projects on this tract at this time.

**Potential Impacts:** There would be no known impacts to other resources.

**Irreversible and Irretrievable Commitments of Resources:** The Proposed Action would not result in any irreversible or irretrievable commitments of environmental resources in addition to the previously stated impacts to gravel resources.

**Cumulative Impacts:** The proposed project would not contribute to cumulative impacts to other environmental resources in the project area.

### 3.12 HUMAN HEALTH AND SAFETY

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** *Noise:* Please see the “Existing Environment” description under *Section 3.9–Aesthetics*.

**Potential Impacts:** For a discussion of impacts to water quality related to human health issues please refer to *Section 3.3–Water Quality*. For impacts to air quality, see *Section 3.4–Air Quality*. *Noise:* The primary human effect due to noise is annoyance. The degree of annoyance due to a noise is subjective and can vary dramatically from person to person based on the level, duration and frequency content of the noise, and other non-acoustic factors, such as prior exposure to similar noises, the age and health of a listener, attitude toward the noise source, the time of day that the noise occurs, etc. Other effects on humans may include speech interference, stress reactions, sleep interference, lower morale, efficiency reduction, and fatigue (Harris 1998). The EPA guideline of  $L_{dn}$  55 dBA or less was determined to be sufficient to protect public health and welfare in residential areas (EPA 1979). The noise from the mine is not expected to exceed the EPA guideline beyond 0.25 miles (1,320 feet) from the crusher. *Traffic:* Haul trucks would access the site only from the paved portion of East Cameron Bridge Road on the north side of the property. To get to I-90 or Jackrabbit Lane, trucks would travel west on East Cameron Bridge Road to South Alaska Road then north and northwest. This route would be the primarily route except for local deliveries. At its peak, the operation would add about 13 haul trucks per hour to the existing traffic. Typical noise levels for heavy trucks are 84 to 86 dBA at 55 mph at 50 feet. The predicted traffic noise  $L_{eq}(h)$  levels due to that volume of truck traffic from the gravel pit do not exceed the Montana Department of Transportation (MDT)  $L_{eq}(h)$  66 dBA traffic noise impact criteria (MDT 2001).

### **Mitigation Measures:**

- Cameron Springs shall keep the crusher at least 220 feet from the east property line boundary.
- Install adequate mufflers on haul trucks.
- Limit haul truck speed to 45 mph on South Alaska Road.
- Contribute financially to the maintenance of South Alaska Road.
- Improve the gravel standard of East Cameron Bridge Road, until it is paved.
- Improve East Cameron Bridge Road as described in Item 15 in Appendix A.
- Apply road signage as required in the operations agreement provided in Appendix A.
- Require trucks entering or leaving the site to be adequately covered or properly loaded.
- Establish signage prohibiting trucks from using “jake brakes” within one mile of the site.
- Educate truck drivers on special conditions pertaining to the site and general road transport.
- Monitor driver performance.
- Provide on-site parking for all company and employee vehicles.

**Irreversible and Irretrievable Commitments of Resources:** *Noise:* The change in noise due to the mining operations would not represent any irreversible or irretrievable commitments of resources. *Truck Traffic:* The changes in the truck and highway traffic due to the mine activities would not represent any irreversible or irretrievable commitments of resources.

**Cumulative Impacts:** *Noise:* Cumulative effects include the combination of noise sources from the mine, the proposed Spanish Peaks gravel pit, and other noise sources such as traffic noise from South Alaska Road and East Cameron Bridge Road, and noise from recreational, agricultural, commercial, and residential activities. These noises are currently present in the area, and would remain into the future. The noise from the mining operations would become the dominant noise source in the area when the crusher is operating, and would increase the noise above existing levels. *Truck Traffic:* The proposed project would increase truck traffic by about 13 trips per hour. The truck traffic trips would be spread across the workday. The Spanish Peaks gravel pit north of the Cameron Springs gravel pit would add to the increased truck traffic in the area.



### 3.13 INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The area proposed for mining is currently pasture land most recently used for grazing horses.

**Potential Impacts:** The area would be shielded from public view by the berms proposed to be on the north and east sides of the property and weeds would be controlled through implementation of the county approved weed management plan. At the end of mining the lands would be reclaimed to grazing land.

**Irreversible and Irretrievable Commitments of Resources:** Once the area is fully reclaimed, it would be changed from relative flat open lands to open land with some topographic relief. Removal of the gravel would make it impossible to return the land to its current topography without filling in the gravel pits. There would be irreversible and irretrievable commitments of industrial, commercial, or agricultural resources as a result of this project.

**Cumulative Impacts:** There are a number gravel pits in operation or proposed for permitting in Gallatin County. The Cameron Springs pit would contribute to the cumulative impact of the removal of the nonrenewable gravel resource in the Gallatin Valley. The reclamation plan would return the land to pasture for no net loss of that type of land in the area.

### 3.14 QUANTITY AND DISTRIBUTION OF EMPLOYMENT

**Proposed Action:** The project would convert open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses. The mine would create about three or four full time jobs during full operations.

**Existing Environment:** The site currently has little or no potential for job creation.

**Potential Impacts:** There may be potential for indirect job creation due to continued industrial resource development and supply of materials for construction.

**Irreversible and Irretrievable Commitments of Resources:** No irreversible or irretrievable commitments of employment resources are associated with this proposal.

**Cumulative Impacts:** Cumulative impacts to employment could be an increase in employment in the valley if other employment remained stable or were increasing or a step toward stabilization if other employment were decreasing.

### 3.15 LOCAL AND STATE TAX BASE AND TAX REVENUES

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The land is currently pasture land taxed at an agricultural rate. The implementation of a mine at the site would change the classification of the land from agricultural to industrial during operation.

**Potential Impacts:** A slight increase in tax revenue could occur because of this project. Gravel pits are generally appraised in the industrial category, which is a higher tax rate than the present agricultural rate. Also, some jobs would be created by this mine, thus slightly increasing both income and payroll taxes.

**Irreversible and Irretrievable Commitments of Resources:** There are no irreversible or irretrievable commitments of resources relative to tax revenue from this proposal.

**Cumulative Impacts:** The cumulative impacts could be a slight increase in property, payroll and income taxes if these taxes in the area were stable or increasing and a slight stabilizing effect if these taxes in the area were declining. These changes would disappear at the end of the project life.

### **3.16 DEMAND FOR GOVERNMENT SERVICES**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The current use of the property places little or no demand on government services.

**Potential Impacts:** The primary demands on governmental services for a gravel pit are related to use of county and state highways, permit review and approval, and inspection by regulatory personnel.

**Irreversible and Irretrievable Commitments of Resources:** The proposal would not result in any irreversible or irretrievable commitments of resources related to government services.

**Cumulative Impacts:** Since there are numerous other gravel mining operations and other commercial ventures in the valley that use the roads and may require inspections by regulatory personnel, the proposal would not materially contribute to the need for government services.

### **3.17 LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The land being proposed for mining has been subjected to emergency zoning by the county to require all gravel pit owners to obtain conditional use permits prior to commencing operation. A suite of operating conditions has been negotiated with Gallatin County, including the preparation of this EA (**Appendix A**).

**Potential Impacts:** Based on the conditions set by the county, this project should have no material impacts.

**Irreversible and Irretrievable Commitments of Resources:** The proposal would not result in any irreversible or irretrievable commitments of resources related to county planning.

**Cumulative Impacts:** By implementing the conditions required by Gallatin County, (**Appendix A**) the operation of the Cameron Springs gravel pit would be compatible with the overall direction and scope of planning within the county.

### **3.18 ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES**

**Proposed Action:** The proposal does not address any recreational potential for the life of the mine. The current and proposed uses of the lands are agriculture and industrial, respectively. There are no wilderness areas in the general vicinity of the proposed project. The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** US 191 is the primary route from the Belgrade area south to Big Sky, the Gallatin National Forest, and Yellowstone National Park. There are numerous access points to National Forest Lands, campgrounds, and other recreational areas off US 191. There is currently no recreational potential on this property.

**Potential Impacts:** Other than a slight increase in truck traffic during operation of the mine, there should be no effect on people accessing recreational resources in the Gallatin Valley area.

**Irreversible and Irretrievable Commitments of Resources:** The proposal would not result in any irreversible or irretrievable commitments of recreational resources or hinder access to those resources.

**Cumulative Impacts:** There would likely be little or no cumulative impact from this project.

### **3.19 DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** One residence is across East Cameron Bridge Road on the site of the Spanish Peaks Gravel pit and one mobile home is east of the property.

**Potential Impacts:** Other than possibly bringing a small number of new employees to the area, this proposal should have little or no impact to housing in the area, unless the post-mining use would include home sites.

**Irreversible and Irretrievable Commitments of Resources:** There are no irreversible or irretrievable commitments of housing resources.

**Cumulative Impacts:** Other than the possibility of a small number of new employees moving to the valley to add to the existing demand for housing, no cumulative impacts are expected because of this project.

### **3.20 SOCIAL STRUCTURES AND MORES**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses. The Proposed Action does not directly address any social structures or mores.

**Existing Environment:** The proposed project is in an area known for its rural residential and agricultural activities; however, the character of the area is under increasing development pressure. Existing surface mining activities are evident throughout the area.

**Potential Impacts:** Development of this project would impact the existing rural/agricultural setting by increasing the amount of industrial/surface mining operations. A change in the intensity of land use with heavy equipment, increased road traffic, noise, and dust, would contribute to the loss of the rural/agricultural setting of the area. These impacts would occur throughout the life of the project, but would cease with the completion of gravel mining operations.

**Irreversible and Irretrievable Commitments of Resources:** Any impacts to social structures and mores would end when the mine ceases operation and the land is returned to a more pastoral setting.

**Cumulative Impacts:** The mining operation, along with other mining operations, is slowly changing the character of the area. The rural character at this site would return upon the end of mining activities and completion of reclamation.

### **3.21 CULTURAL UNIQUENESS AND DIVERSITY**

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The proposed project is in an area known for its rural residential and agricultural activities; however, the character of the area is under increasing development pressure. Existing surface mining activities are evident throughout the area.

**Potential Impacts:** The area has been undergoing a change from strictly rural to rural–residential–industrial for a number of years. The proposed project would not change that trend.

**Irreversible and Irretrievable Commitments of Resources:** The proposed project would not result in any irreversible or irretrievable commitments of resources related to the areas cultural diversity.

**Cumulative Impacts:** The mining operation, along with other mining operations, is contributing to the changing character of the area. The rural character would return when mining activities and reclamation are completed.

### 3.22 OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES

**Proposed Action:** The project would convert agricultural, open lands to an industrial use. During reclamation, the area would be graded and seeded with pasture grasses.

**Existing Environment:** The proposed project is in an area known for its mixed rural residential and agricultural activities; however, the character of the area is under increasing development pressure. Existing surface mining activities are evident throughout the area.

**Potential Impacts:** Under the Opencut Mining Act, DEQ has no authority or jurisdiction over property value issues. The Legislature has given DEQ two means of mitigating the effects of gravel operations on adjacent property. First, DEQ has authority to protect air quality; to minimize noise and visual impacts to the degree practicable through use of berms, vegetation screens, and limits on hours of operation; and to otherwise prevent significant physical harm to adjacent land. Second, in order to protect and perpetuate the taxable value of property, land on which operations are completed must be graded and revegetated or reclaimed to a locally approved land use. In 1998, DEQ hired Mr. Philip Rygg (DEQ 2008), Member of the Appraisal Institute, to conduct a study on the effect of two open pit gravel mining operations near Bigfork, Montana on neighborhood property values. The purpose of the study was to assess if there was a measurable adverse effect on the property values within a one half mile radius of the active gravel pits. The following restrictions applied: neighborhood water quality and quantity would be protected; pit operations were limited to a gravel crusher, wash plant, cement batch mill, and pug mill; hours of operation were restricted to 6 A.M. to 7 P.M. Monday through Saturday; size of open mining area was not to exceed 33.7 acres; fueling areas were lined and bermed to contain spills; and reclamation would be completed by 2008. Rygg employed a sales comparison technique to compare actual sales values of six properties adjacent to, or within 1/8 mile, of the gravel pits (subject sales), to comparable sales of 25 similar properties (in the Flathead Valley in economically similar neighborhoods with physically similar improvements) located outside the influence of the gravel pits (comp sales). The subject properties were influenced by noise, dust, traffic, fumes and/or views of the pits; all sales occurred while gravel pits were active. If there was a difference between the price of the influenced property and the price of the uninfluenced property that could not be attributable to other causes (e.g. size, age, land value or physical condition), the difference may be attributable to economic depreciation caused by the gravel pits. Rygg concluded that, assuming continuation of the same level of gravel pit activity as in 1994-1996 (in 1997 there was a peak level of gravel pit activity), the presence of the gravel pits had not adversely affected the value of the subject properties, and therefore would not adversely affect the other properties in the neighborhood. Rygg stated that *“a continuation of this peak level of operation [1997 level] could eventually erode neighborhood property values, although existing market evidence is insufficient to validate such a hypothesis.”*

Rygg's analysis was reviewed by Jim Fairbanks, Region 3 Manager of the Property Assessment Division of the Montana Department of Revenue (Fairbanks 1998). Fairbanks concluded that Rygg's approach was valid, and stated that in his experience with arguments of Missoula County

taxpayers asserting negative property value impacts from gravel pits, power lines, traffic etc.; there were no measurable impacts in virtually all cases. He stated that “*potential purchasers accept newly created minor nuisances that long-time residents consider value diminishing.*” (Fairbanks 1998). Based on Rygg’s analysis and Fairbanks’ review, sale or market value of adjacent property has not been shown to be negatively affected by the presence of a gravel pit and associated operations.

Mr. Orville Bach taught college level economics for 33 years and is a Gallatin County Resident. Mr. Bach presented comments to the Gallatin County Commission regarding gravel pits near Cameron Bridge Road, and makes the argument that there most likely will be negative effects on property values (Bach 2008). In his comments he stated there is excellent economic research available that provides data on economic damage resulting from gravel pit operations, and he included nine citations to support this statement. He included a figure from one of the citations showing the impact on residential property values based on distance of the property from the gravel mine – the closer the property, the greater the impact. Based on this figure, properties less than a quarter mile from the mine experienced up to a 32% decline in value. The impact on property value declined with increased distance from the gravel mine. Properties three miles away (the furthest distance in the analysis) experienced a 5% decline. Mr. Bach pointed out that declining property values could eventually translate into decreased property tax revenue for the County and that this decreased revenue may not be offset by property taxes paid by the gravel operation.

If homeowners believe their property values are decreased because of a gravel operation, they may appeal to the County and the State for tax adjustment. Impact-mitigating restrictions such as hours of operations, dust control, water testing and visual berms on operations of this nature have been successful elsewhere in the state. Formal tax appeals have not generated a reduction in taxable values of land affected by aggregate mining. In responding to valuation challenges of ad valorem tax appraisals, the Montana Department of Revenue did not find measurable negative impacts to property values due to gravel pits and other “nuisances” (Fairbanks 1998).

**Irreversible and Irretrievable Commitments of Resources:** The Proposed Action would not result in any irreversible or irretrievable commitments of resources related to the area’s social and economic circumstances.

**Cumulative Impacts:** Development of the Cameron Springs Pit would contribute to the overall development trend in Gallatin Valley. However, the change in land use on this parcel is temporary, and does not constitute a significant contribution to cumulative impacts to social and economic circumstances in the county.

### **3.23 PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED**

Gallatin County Commission  
Gallatin County Weed Coordinator  
Gallatin County Planning Office  
Montana State Historical Preservation Office  
Resident notification letters sent to landowners within 1,000 feet of permit area  
Montana Natural Heritage Program  
Montana Department of Environmental Quality

<b>Agency</b>	<b>Permit</b>
Montana Department of Natural Resources and Conservation	Application for Beneficial Water Use Permit Notice of Completion of Groundwater development
MT Department of Environmental Quality	Air quality permit Opencut Mining Permit Storm Water Discharge Plan
Gallatin County Weed Board	Weed control plan
Gallatin County Planning Office	Provide evidence of legal water rights
Montana Department of Transportation	Haul truck GVW Regulation

### **4.0 MAGNITUDE AND SIGNIFICANCE OF POTENTIAL IMPACTS**

The potential impacts related to the general environment are not likely to be significant based on the lack of sensitive or critical vegetation, wildlife or their habitats. Water usage for the proposed operation would not result in a substantive decrease of available water supply to the Gallatin Valley. There are no identified water quality impacts that have the potential to adversely impact human health and safety. The Plan of Operations includes measures such as locating soil berms along some of the site boundaries and placing the crusher below existing ground level to reduce noise, visual, and light impacts. DEQ would enforce state and federal air guidelines and standards to ensure the protection of human health and welfare.

### **5.0 CONCLUSION OR RECOMMENDATION FOR FURTHER ENVIRONMENTAL ANALYSIS**

Alternative C, the modified alternative that includes the mitigations, would be most protective of the human and physical environment. An Environmental Assessment is an adequate document to address potential impacts of the proposed opencut gravel mine.

EA Prepared By: Tetra Tech, Inc., Helena, MT

## 6.0 REFERENCES

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- Big Sky Acoustics (BSA), 2008. Helena Sand & Gravel Lake Helena-Valley Drive Gravel Pit Environmental Noise Study. Prepared for Helena Sand & Gravel, Helena, Montana. Dated February 29, 2008.
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- Federal Transit Administration (FTA), 1995. Transit Noise and Vibration Impact Assessment, Final Report, April 1995. U.S. Department of Transportation, DOT-T95-16.
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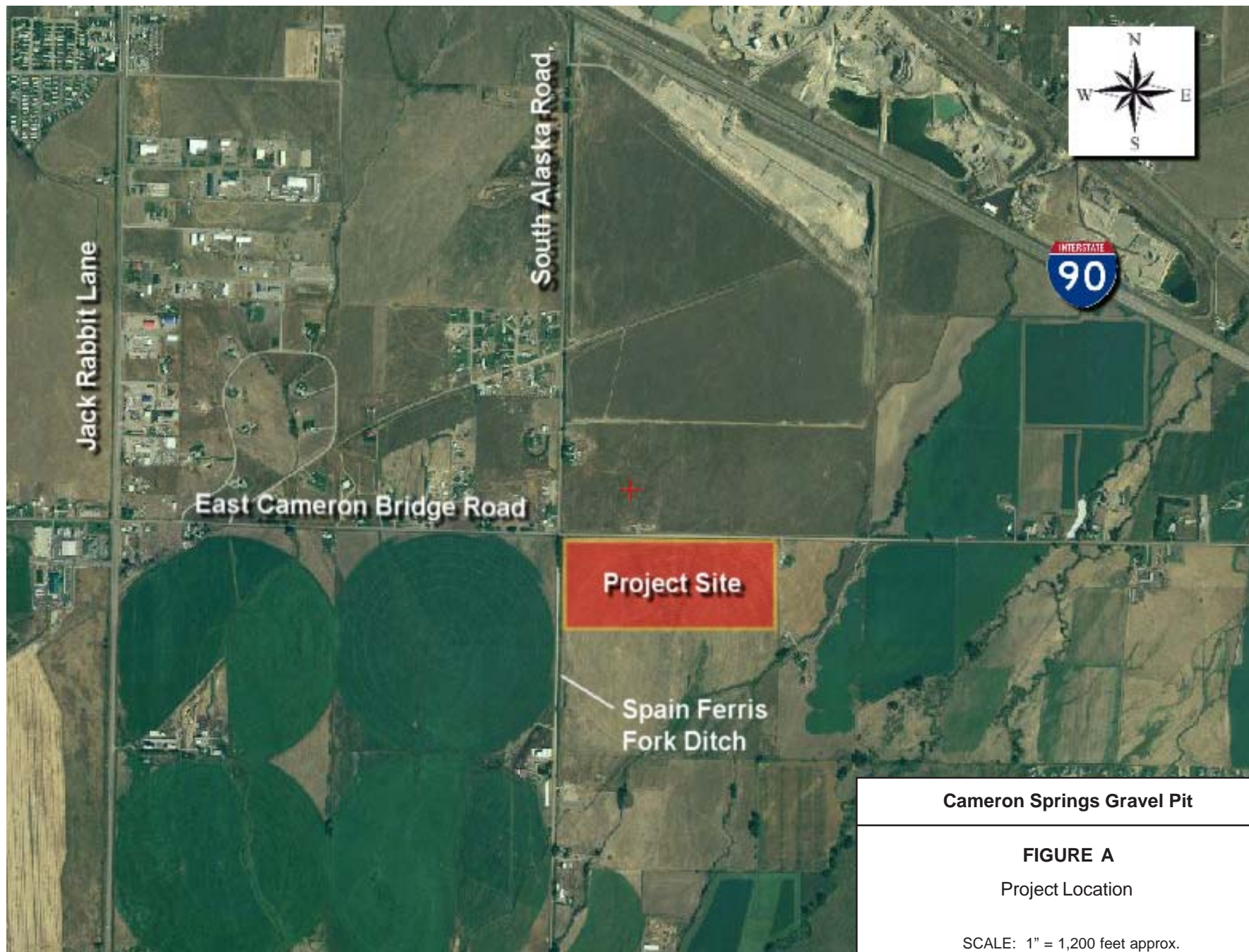
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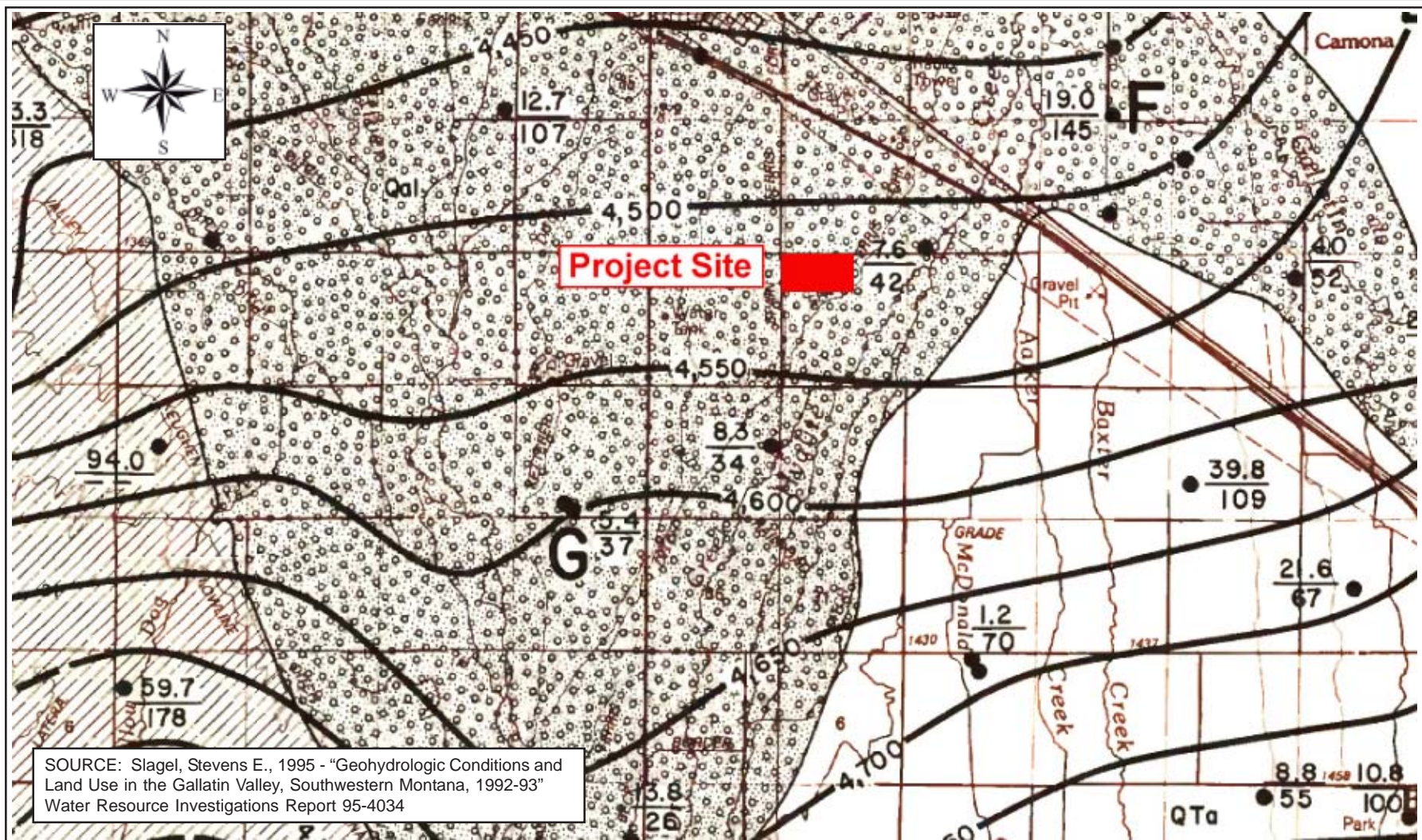


**Cameron Springs Gravel Pit**

**FIGURE A**  
Project Location

SCALE: 1" = 1,200 feet approx.





SOURCE: Slagel, Stevens E., 1995 - "Geohydrologic Conditions and Land Use in the Gallatin Valley, Southwestern Montana, 1992-93" Water Resource Investigations Report 95-4034

SCALE: 1" = 6500 feet approx.

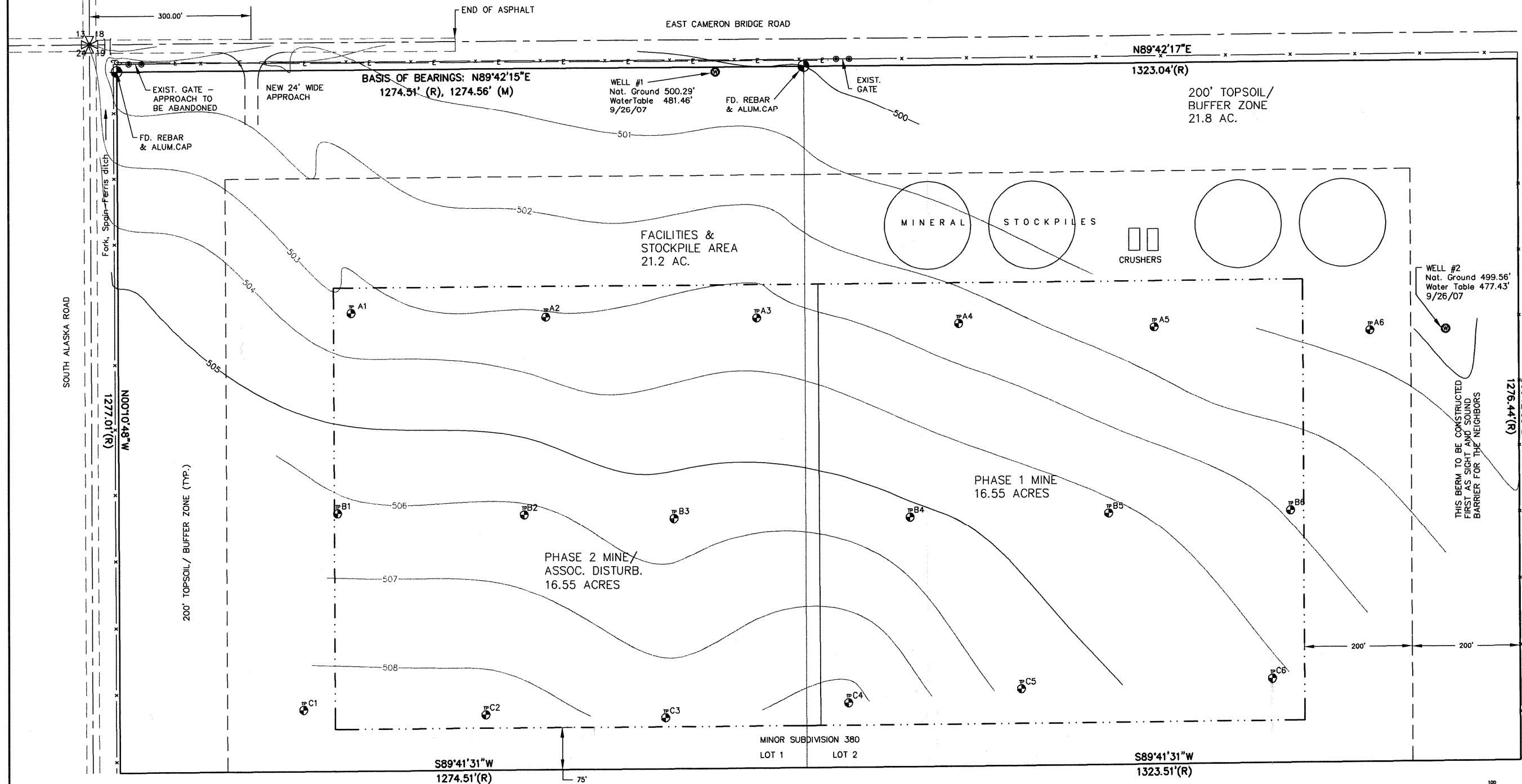
### Cameron Springs Gravel Pit

### FIGURE B

Geohydrologic Conditions  
Near Project Site

# CAMERON SPRINGS GRAVEL PIT

LOTS 1 & 2, MINOR SUBDIVISION NO. 380  
LOCATED IN N 1/2, SECTION 19, TOWNSHIP 1 S., RANGE 5 E., P.M.M.  
GALLATIN COUNTY, MONTANA



## ACREAGES

PH.1 MINE	16.55 AC.
FACILITIES	21.2
TOPSOIL	21.8
ASSOC. DIST.	16.55
TOTAL PERMIT	76.1 AC.

## GRAPHIC SCALE



CAMERON SPRINGS GRAVEL PIT  
1050 E. CAMERON BRIDGE RD., BELGRADE, MT

Kenai Engineering, Inc. 763-4732  
Box 457, Gallatin Gateway, MT 59730

DATE: 10/07  
REV.:

## **APPENDIX A**

**Operating Conditions for Cameron Springs, LLC for Gravel Pit Operations Conducted on  
76.1 acres in the NW 1/4, and NE 1/4, Section 19, T1S, R5E, Gallatin County Montana.**

**AGREEMENT**

Plaintiff Cameron Springs, , LLC, a Montana limited liability company with address of 2149 West Durston, #31, Bozeman, Montana 59718 and Defendant Gallatin County, a political subdivision of the State of Montana, with address of 311 West Main Street, Bozeman, Montana 59715, the parties to Montana 18<sup>th</sup> Judicial District case No. DV08-471 AX, hereby agree as follows:

1. The parties will present presiding Judge John Brown a signed stipulation to dismiss this case with prejudice, based upon the conditions listed in the paragraphs below.
2. Attached to this Agreement as Exhibit A are the Operating Conditions for Cameron Springs, LLC for gravel pit operations conducted on approximately 76 acres located in the NW1/4 and NE1/4 of Section 19, Township 1 South, Range 5 East, P.M.M., Gallatin, County, State of Montana. These conditions, along with the conditions imposed by Montana Department of Environmental Quality, shall govern the gravel operations that take place on this site.
3. Should either party decide that the other party breached any of the Operating Conditions of Exhibit A, either party may seek injunctive or other relief in the district court to enforce any of the Operating Conditions of Exhibit A. A party's decision not to seek judicial enforcement of any Operating Condition is not a waiver of any future action to seek enforcement of any Operating Condition or Operating Condition(s).
4. As Cameron Springs, LLC is governed by the Operating Conditions of Exhibit A, Cameron Springs, LLC need not apply

**EXHIBIT** 2

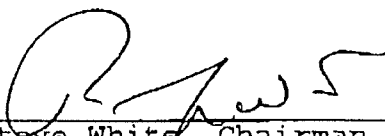
for a conditional use permit pursuant to the County's Interim Zoning Regulation adopted May 7, 2008.

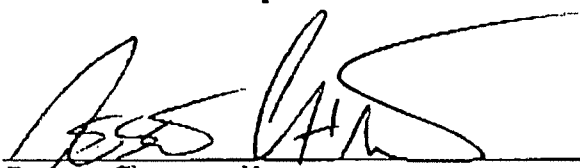
5. Gallatin County forthwith shall grant a driveway permit to Cameron Springs.

6. This Agreement may be modified at any time if agreed to in writing by the parties.

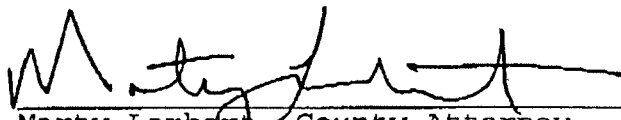
7. The parties agree that, as to dismissal of Montana 18<sup>th</sup> Judicial District case No. DV08-471 AX both sides shall bear its own costs and attorney's fees.

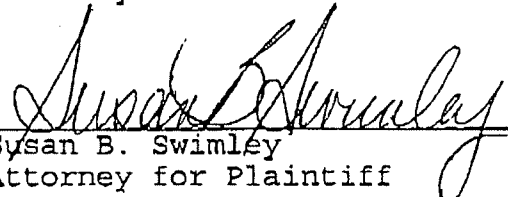
DATED this 6 day of January, 2009.

  
\_\_\_\_\_  
Steve White, Chairman  
Gallatin County Commission

  
\_\_\_\_\_  
Jesse Chase, Manager  
Cameron Springs, LLC

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Marty Lambert, County Attorney  
Attorney for Defendant

  
\_\_\_\_\_  
Susan B. Swimley  
Attorney for Plaintiff



**EXHIBIT A**

**Operating Conditions for Cameron Springs, LLC  
for gravel pit operations conducted on 76.1 acres located in the NW1/4 and  
NE1/4, Section 19, T1S, R5E, Gallatin County, Montana.**

**General:**

1. Cameron Springs, LLC shall hire, at its own expense, Tetra Tech MM, 851 Bridger Drive, Suite 6, Bozeman, Montana or another contractor recognized by MDEQ on the following website:  
<http://gsd.mt.gov/apps/environservices/ContractorList.aspx?ServiceID=EP1>  
to perform an Environmental Assessment (EA) in compliance with the Montana Environmental Policy Act (MEPA). A draft of the EA must be completed within 30 days of settlement in this case. Cameron Springs shall provide a copy of the draft EA to the Gallatin County Planning Department. The County will provide an opportunity for one public hearing, to be held not later than 15 days after the County receives the draft EA, for public comment on the draft EA. Cameron Springs agrees to request an amendment of its DEQ Permit if Cameron Springs concludes (following review, analysis and weighing of any public comment received and data collected) that there is credible scientific evidence that continued operation under the terms of the existing permit would violate quantitative or numerical standards of §§82-4-401 through 82-4-446, MCA and administrative rules adopted under the authority of the Opencut Mining Act, §§17.24.201 through 17.24.225, ARM. If Cameron Springs does not conclude that there is credible scientific evidence to justify a conclusion that an amendment is necessary Gallatin County may submit a request to MDEQ to review the EA. Upon such review MDEQ may amend the permit if it concludes that credible scientific evidence requires amendment of the permit. If Cameron Springs or Gallatin County requests an amendment to Cameron Springs' permit conditions, Cameron Springs is not subject to any Gallatin County zoning regulation in effect at the time of such request. If MDEQ amends the conditions of Cameron Springs' permit, Cameron Springs is not subject to any Gallatin County zoning regulation in effect at the time of MDEQ's amendment of Cameron Springs' permit.
2. Cameron Springs will comply with Tetra Tech's or other contractor's recommended mitigation measures (action items) set forth in the EA. After proper notice and a hearing Cameron Springs may request that the Gallatin County Commission waive or modify specific suggested mitigation measures. Notwithstanding conditions #1 and #2, Cameron Springs shall comply with all the requirements and conditions of the MDEQ Opencut Mining Permit dated May 6, 2008.
3. Hours of operation for all facets of the operation, including but not limited to offsite truck hauling, gravel crushing and asphalt mixing, except as provided below, shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and 8:00 a.m. to 5:00 p.m.



Saturdays unless adjacent property owners are adequately notified of temporary extended hour demand periods. No crushing of raw material shall occur on Saturdays. Extended demand hours for special projects are: 6:00 a.m. to 8:00 p.m., Monday through Saturdays. Extended hours cannot exceed more than eight weeks in any six month period. Prior to commencing temporary extended hour operations operator shall notify the Belgrade Planning Department and adjacent property owners within 1,000 feet from the edge of the permitted area at least seven (7) days but not more than 30 days prior to commencing addition operations. Notification shall be in writing via certified mail.

4. No operations at the gravel mine are permitted on Sundays, Christmas, or Thanksgiving.
5. No asphalt batch plant or concrete processing facilities shall be installed on the site without a change to these conditions of settlement.

**Natural Environment:**

6. Cameron Springs shall provide to the Belgrade Planning Department and the Gallatin County Water Quality District (LWQD) all water quality and quantity data for the two existing groundwater monitoring wells at the time the information is submitted to MDEQ.
7. Prior to hauling material offsite, Cameron Springs shall provide to the County Planning Department evidence verifying Cameron Springs has recognized legal water rights or will obtain legal water rights for all facets of operation (including water for establishing all landscaping and seeding) as well as for all post-operation/reclamation uses. If the installation of a 35 gpm exempt well is required to satisfy this requirement, evidence of the installation and registration of a 35 gpm exempt well shall be submitted to the County Planning Department.
8. Prior to hauling material offsite, Cameron Springs shall provide adequate on-site sanitary facilities for employees. The facilities shall be screened from view of a public road and any existing residential structures.
9. No mining shall occur in the groundwater and Cameron Springs shall at all times maintain a minimum of three feet of vertical separation between the lowest level of mining activity and the annual high groundwater level.
10. Cameron Springs shall contact the Spain Ferris Ditch Company (SFDC) and, if required by the SFDC, enter into a binding Memorandum of Agreement with the SFDC indicating any mitigation measures to be undertaken before, during, or after operations to protect the water quality and quantity in both the Spain Ferris Fork Ditch that runs along the west boundary of the property and the fork of the Spanish Ferris Ditch that diagonals the site on the southeast corner of the project. Nothing in this condition prohibits Cameron

- Springs from installing a culvert in Spain Ferris Fork Ditch that runs adjacent to the west boundary of the property or as necessary to construct the main access on Cameron Bridge Road. Until relocation, or other measure approved by the Spain Ferris Ditch Company, no surface disturbance or storage of materials or equipment of any kind shall occur closer than 50 horizontal feet to this lateral as measured from the centerline on the lateral.
11. To minimize non-point source (NPS) pollutants entering any water conveyance facility Cameron Springs shall employ best storm water management practices for the entire operation.
  12. The applicant shall not store hazardous materials such as unleaded fuel onsite. Diesel fuel shall be contained in a manner prescribed by MDEQ and shall be contained using secondary containment procedures as required by MDEQ.
  13. Prior to hauling material offsite, Cameron Springs shall obtain a Permit from MDEQ Air Resources Management Bureau for all on-site equipment, such as a rock crusher, that require a separate permit, and provide documentation of the needed permit(s) to the Belgrade Planning Department.
  14. Cameron Springs shall at all times maintain compliance with the Gallatin County Weed District requirements for this operation.

**Transportation:**

15. Prior to hauling material off site, Cameron Springs shall improve Cameron Bridge Road from the eastern most portions of the access driveway to, and including, the intersection of Cameron Bridge Road and Alaska Road South and shall cease at the westerly boundary of the intersection of Cameron Bridge Road and Alaska Road South. These improvements shall be completed pursuant to Gallatin County gravel standards per section 7 of the most current version of the Gallatin County subdivision regulations and comply with the following:
  - a. Structural improvements shall be determined after random bore-hole sampling to determine the existing sub-grade and base section of the roadway;
  - b. An engineering analysis and design shall be performed to establish the proper construction methods to ensure the roadway is improved to current County standards;
  - c. All section and  $\frac{1}{4}$  corners disturbed due to construction activities shall be raised to finished grade. All utility relocations, drainage improvements, replacement of bridges with culverts, and incidental work needed to accomplish this offsite roadwork shall be included;

- d. Plans and encroachment permits for these improvements were submitted to the County Road Department in December of 2007 and are approved subject to the standards included in this settlement agreement;
- e. All areas of the public right of way disturbed during construction activities shall be sodded or reseeded;
- f. For all required offsite road improvements a two (2) year written warranty from the contractor shall be required. This warranty must be submitted to the county road office;
- g. All offsite roadwork shall be built to Montana Public Works Standard Specifications (Current Edition), inspected and certified by a licensed engineer. Such inspection and certification must be provided to the county road office in writing; and
- h. A pre-construction meeting shall be scheduled with the County Road Department prior to the start of any construction.

Until the above described roads are paved, Cameron Springs shall be responsible for maintaining to county gravel standards all above improvements. This shall include periodic grading or application of additional material in order to keep the above improvements maintained to County road standards. Gallatin County shall not restrict Cameron Springs' access from its entrance to the intersection of Cameron Bridge Road and Alaska Road South. Cameron Springs agrees it is obligated under the Meyer-Nistler Improvements Agreement to improve Cameron Bridge Road east of the access road. This IA is modified to release Cameron Springs from any obligation to improve that portion of Alaska Road South, located south of the Cameron Bridge Road/ Alaska Road South intersection. This IA shall be modified to allow Cameron Springs to complete these improvements, including paving, within two (2) years of the date of this agreement. Cameron Springs may extend this agreement for no more than one (1) additional two (2) year period.

Cameron Springs shall apply magnesium chloride in the amount of ½ gallon per square yard and reapplied once per month, or more frequently as needed as determined by the County Commission, to Cameron Bridge Road from the Cameron Springs' driveway access to the intersection of Cameron Bridge Road and Alaska Road South.

Cameron Springs shall deposit with the Gallatin County Treasurer in an independent account \$100,000 to be used by Gallatin County, in its discretion, for maintenance of that portion of Alaska Road South north of the intersection of Cameron Bridge Road and Alaska Road South. All references to Alaska Road South contained in this paragraph refer only to that part of Alaska Road South located north of the intersection of Cameron Bridge Road and Alaska Road South. Cameron Springs agrees this money is not refundable and may be used by Gallatin County for maintenance of Alaska Road South or

for reconstruction of Alaska Road South at anytime in the future. This money is agreed to be in exchange for any required improvements to that portion of Alaska Road South located south of Cameron Bridge Road as agreed to in the Improvements Agreement for the Meyer-Nistler Subdivision. The parties agree to modify the above IA to reflect this. Funds shall be paid ten days before off-site hauling of gravel resources commences.

Notwithstanding the above, Cameron Springs agrees it is obligated under the Meyer-Nistler Improvements Agreement to improve Cameron Bridge Road east of the access road and specifically to improve Cameron Bridge Road the entire length of the property. This IA shall be modified to allow Cameron Springs to complete these improvements, including paving, within two (2) years of the date of this agreement. Cameron Springs may extend this agreement for no more than one (1) additional two (2) year period.

In no case shall the contribution of Cameron Springs to the County public road system, including the above described cash contribution for Alaska Road South and any required physical improvements, be less than or more than \$201,991.00.

Cameron Springs agrees that should any of the lots contained in Minor Subdivision 380 be further subdivided, Gallatin County reserves the right to require additional improvements as mitigation for the impacts of the development to Cameron Bridge Road or Alaska Road South, either north or south of the intersection of Alaska Road South and Cameron Bridge Road as shall be established through the further subdivision process.

16. Prior to commencing any hauling of mined material off site, Spanish Peaks shall install road signage as approved by the Gallatin County Road and Bridge Department in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) north along Alaska Road to the City of Belgrade boundary to alert vehicular and pedestrian traffic to the presence of heavy trucks and equipment.
17. Cameron Springs' payment of \$100,000.00 to Gallatin County is for maintenance of Alaska Road South north from the intersection of Cameron Bridge Road and Alaska Road South to Jackrabbit Lane. Gallatin County must keep Cameron Springs' contribution in a line item dedicated only to maintenance of the above described portion of Alaska Road South. Should Gallatin County order emergency closure or weight limitations on Alaska Road South, Cameron Springs may, during the period of such closure or weight limitation, use other county roads to conduct its operations to or from Cameron Springs' site.
18. Cameron Springs shall require the operators of all trucks hauling mined material or products to or from the site to travel between the access drive on Cameron Bridge Road and the intersection of Alaska Road South and then north along Alaska Road South to Jackrabbit Lane. This condition does not apply to employees driving their personal vehicles to and from the site. No hauling shall occur south of the intersection of Alaska Road South and Cameron Bridge Road or west of the access drive on Cameron Bridge Road. However, Cameron Springs may use other Gallatin County roads within the

vicinity of the operation to deliver sand, gravel, asphalt, concrete or aggregate to a job site within an area bound by the following: east of Jackrabbit Lane, north of Baxter Lane and south of Interstate -90 if it has a contract to deliver those products within that area.

19. Cameron Springs shall require all trucks entering or leaving the site to be adequately covered or properly loaded to prevent material from spilling onto public roads. Cameron Springs shall require all trucks entering or leaving the site to refrain from using "jake" type compression brakes within one mile of the site. Notwithstanding the above, Cameron Springs shall enforce standard safety measures including preventing overfilled trucks, covering loads, educating truck drivers, and monitoring driver performance.

#### **Noise, Dust and Visual:**

20. Cameron Springs shall, consistent with best industry practices, enclose all pumps or other noise producing systems within appropriate noise containment apparatus.
21. Where audible backup alarms are installed on any on-site equipment all backup alarms shall be Mine Safety and Health (MSHA) approved and be of a type utilizing a manually adjustable, ambient-sensitive, direction sound technology or utilize strobe light alarms to ensure a backup alarm does not sound unless and until an object in motion behind or to the rear of the equipment is detected.
22. Cameron Springs shall install high-grade mufflers or other sound-dampening devices on all diesel powered generators and equipment to reduce noise impacts.
23. Cameron Springs shall perform dust abatement consistently and conscientiously to limit the impacts to the air quality of surrounding properties and the general air quality of Gallatin County. To comply with the above, Cameron Springs shall spray water on all materials during the crushing process and use tackifiers or water on fines storage to control dust emanation from any stored materials. Applicant shall spray magnesium chloride (or other dust control measures as approved by the MDEQ) on interior roads to control dust emanating from interior roads.
24. Cameron Springs shall make reasonable efforts to hood, screen or direct light in a manner that it shall not be detrimental to the adjoining property owners or the neighborhood. Lights shall be extinguished at the close of business each day, with the exception of limited security lighting.
25. All parking areas for employee vehicles and company vehicles shall be provided onsite.
26. Prior to hauling material offsite or as required by the MDEQ permit, which ever must occur first Cameron Springs shall construct topsoil overburden berms in size and locations as shown on the "Overall Mining Plan (Sheet B)" included in the Opencut Permit Application. All areas of stockpiled topsoil and overburden berms shall be adequately seeded per the requirements of the Gallatin County Weed District and

adequately watered to establish the drought resistant / arid landscaping for the duration of the operation to ensure seeding is successful and plant growth adequately controls erosion and weed growth.

Notwithstanding the above, Cameron Springs shall make a best effort to create a vegetative buffer plan that visually screens all phases of the operation from view of nearby residences, in conformance with Cameron Springs' MDEQ permit.

**Public Safety:**

27. Prior to hauling material offsite, Cameron Springs shall notify the Central Valley Fire District regarding all emergency spill containment and evacuation plans.
28. Cameron Springs shall ensure blasting operations may only occur upon a minimum of 24-hour written notice via certified mail to all landowners within 2500 feet of the site.

## **APPENDIX B**

### **Well Data and Test Pit Logs**

## Other Options

Plot this site on a topographic map  
View scanned well log (1/18/2007 6:45:25 PM)

Section 7: Well Test Data

Total Depth: 60  
Static Water Level: 10  
Water Temperature:

### Air Test \*

80 gpm with drill stem set at 55 feet for 1 hours.  
Time of recovery 1 hours.  
Recovery water level 10 feet.  
Pumping water level feet.

City	State	Zip Code
BOZEMAN	MT	59718

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter Sections</b>
01S	05E	19	NE¼ NW¼
<b>County</b>		<b>Geocode</b>	
GALLATIN			
<b>Latitude</b>	<b>Longitude</b>	<b>Geomethod</b>	<b>Datum</b>
45.742025	111.156249	TRS-SEC	NAD83
<b>Altitude</b>	<b>Method</b>	<b>Datum</b>	<b>Date</b>

Addition	Block	Lot
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### Section 8: Remarks

IRRIGATION (1)

## Section 9: Well Log

Drilling Method: ROTARY

### Geologic Source

Date well completed: Friday, August 15, 2003

Unassigned

### Borehole dimensions

From	To	Diameter
0	60	6

## Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	60	6	0.250		WELDED	STEEL

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
60	60	6			OPEN BOTTOM

### Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	Y

[illegible]

## Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:

**Company:** HAGGERTY DRILLING

**License No: WWC-353**

Date 8/15/2003

Completed: 8/15/2003



## Other Options

Plot this site on a topographic map  
View scanned well log (1/18/2007 6:45:34 PM)

## Section 7: Well Test Data

Total Depth: 50  
Static Water Level: 47.83  
Water Temperature:

### Unknown Test Method \*

Yield \_ gpm.  
Pumping water level \_ feet.  
Time of recovery \_ hours.  
Recovery water level \_ feet.

Recovery water level      feet.

**Zip Code**

59714

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 8: Remarks**  
MW5 FOR MONITORING WATER LEVELS AND NITRATES

**Datum**  
NAD27

Date \_\_\_\_\_

**Lot**

## Section 9: Well Log

### Geologic Source

Unassigned

[illegible]

## Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:**  
**Company:** POTTS DRILLING INC  
**License No:** MWC-185  
**Date**  
**Completed:** 4/10/2002

**Name:**

**Company:** POTTS DRILLING INC

**License No:** MWC-185

Date 4/10/2002

Completed: 4/10/2002

---

## Other Options

Plot this site on a topographic map  
View scanned well log (1/18/2007 6:45:41 PM)

## Section 7: Well Test Data

Total Depth: 58  
Static Water Level: 12  
Water Temperature:

### Air Test \*

50 gpm with drill stem set at 55 feet for 1 hours.  
Time of recovery \_ hours.  
Recovery water level 12 feet.  
Pumping water level \_ feet.

City	State	Zip Code
BOZEMAN	MT	59718

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

GALLATIN

<b>Latitude</b>	<b>Longitude</b>	<b>Geomethod</b>	<b>Datum</b>
45.742025	111.161584	TRS-SEC	NAD83
<b>Altitude</b>	<b>Method</b>	<b>Datum</b>	<b>Date</b>

### Section 8: Remarks

Addition	Block	Lot
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## Section 9: Well Log

### Section 3: Proposed Use of Water

#### DOMESTIC (1)

### Geologic Source

#### Section 4: Type of Work

Drilling Method: ROTARY

### Section 5: Well Completion Date

Date well completed: Tuesday, August 29, 2000

## Section 6: Well Construction Details

### Borehole dimensions

From	To	Diameter
42	63	6

## Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
42	58	6	0.250		WELDED	STEEL

### Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
58	63	6			OPEN HOLE

### Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	Y

[illegible]

### Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: \_\_\_\_\_

**Company:** VAN DYKEN DRILLING INC

**License No:** WWC-380

Date 8/29/2000

**Completed:**

## Other Options

**Plot this site on a topographic map**  
**View scanned well log (1/18/2007 6:45:55 PM)**

Section 7: Well Test Data

Total Depth: 38  
Static Water Level: 35.25  
Water Temperature:

### Unknown Test Method \*

Yield \_\_ gpm.  
Pumping water level \_\_ feet.  
Time of recovery \_\_ hours.  
Recovery water level \_\_ feet.

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 8: Remarks**  
MW7 FOR MONITORING WATER AND NITRATE LEVELS

## Section 9: Well Log

### Geologic Source

Unassigned

[illegible]

### Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:**  
**Company:** POTTS DRILLING INC  
**License No:** MWC-185  
**Date**  
**Completed:** 4/8/2002

### Borehole dimensions

From	To	Diameter
0	38	6

## Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
1.6	38	6	0.250		WELDED	STEEL

### Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
25	38	6	130	1/8X1IN	HOLTE AIR PERFORATOR

### Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	Y

## Other Options

**Plot this site on a topographic map**

## Section 7: Well Test Data

Total Depth: 76  
Static Water Level: 35  
Water Temperature:

### Air Test \*

25 gpm with drill stem set at 71 feet for 1 hours.  
Time of recovery 1 hours.  
Recovery water level 35 feet.  
Pumping water level feet.

1498 E. CAMERON BRIDGE RD

City	State	Zip Code
BELGRADE	MT	59714

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Township	Range	Section	Quarter Sections
01S	05E	19	NW¼ NE¼
County		Geocode	

GALLATIN

<b>Latitude</b>	<b>Longitude</b>	<b>Geomethod</b>	<b>Datum</b>
45.742025	111.150913	TRS-SEC	NAD83
<b>Altitude</b>	<b>Method</b>	<b>Datum</b>	<b>Date</b>

### Section 8: Remarks

1498 E. CAMERON BRIDGE EAST

Addition	Block	Lot
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## Section 9: Well Log

### Geologic Source

Unassigned

### Section 3: Proposed Use of Water

DOMESTIC (1)

#### Section 4: Type of Work

Drilling Method: ROTARY

## Section 5: Well Completion Date

Date well completed: Tuesday, March 15, 2005

## Section 6: Well Construction Details

### Borehole dimensions

From	To	Diameter
0	76	6

## Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	76	6	0.250		WELDED	A53B STEEL

There are no completion records assigned to this well.

### Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	Y

[illegible]

## Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: \_\_\_\_\_

**Company:** KEVIN HAGGERTY DRILLING INC

**License No:** WWC-353

Date 3/15/2005

**Completed:**

**Test Pit Logs**  
Cameron Springs Gravel Pit

Location: (See drawing)

Date: 9/26/2007

Method: Excavator

Logged by: Hellier & Raymond

Hole ID	Topsoil	Overburden	Gravel	Rock Size	Water	Comments
A-1	0.0-0.9	0.9-1.9	1.9-13.2	to 10"	13.2	Predominately well graded, 6"-minus gravel
A-2	0.0-0.9	0.9-1.4	1.4-11.2	to 10"	dry	Predominately well graded, 6"-minus gravel
A-3	0.0-0.8	0.8-1.6	1.6-14.1	to 8"	dry	Predominately well graded, 6"-minus gravel
A-4	0.0-0.9	none	0.9-6.1	to 8"	dry	Predominately well graded, 6"-minus gravel
A-5	0.0-1.0	none	1.0-13.7	to 8"	dry	Predominately well graded, 6"-minus gravel
A-6	0.0-0.7	0.7-1.4	1.4-6.2	to 6"	dry	Overburden is 90 % gravel to 6"
B-1	0.0-0.8	0.8-1.2	1.2-7.6	to 6"	dry	
B-2	0.0-0.7	none	0.7-13.5	to 6"	dry	Top 1 ft. of gravel is silty
B-3	0.0-1.0	1.0-2.3	2.3-6.3	to 6"	dry	Overburden is silty (less than 30% gravel)
B-4	0.0-1.1	1.1-1.6	1.6-14.2	to 8"	dry	Predominately well graded, 6"-minus gravel
B-5	0.0-1.1	1.1-1.9	1.9-6.0	to 6"	dry	Overburden is 90 % gravel to 6"
B-6	0.0-0.9	none	0.9-13.6	to 6"	dry	
C-1	0.0-0.7	0.7-1.2	1.2-11.9	to 8"	12.1	
C-2	0.0-0.5	0.5-1.4	1.4-6.1	to 6"	dry	Top 1 ft. of gravel is silty but usable
C-3	0.0-0.7	0.7-1.3	1.3-12.4	to 8"	dry	
C-4	0.0-0.9	0.9-1.3	1.3-6.2	to 6"	dry	Overburden is 90% usable rock.
C-5	0.0-0.7	0.7-1.8	1.8-12.1	to 6"	dry	One rock to 12"
C-6	0.0-0.7	0.7-1.1	1.1-6.5	to 6"	dry	

Average:      0.9          0.6  
                  (10.8 in.)      (7.2 in.)

Notes: All depths listed are from ground surface in feet.  
Shallow holes (A-4, A-6, etc.) were dug to only 6 feet for expediency.  
No clay or sand pockets were found.

## **APPENDIX C**

### **Adjacent Or Nearby Landowners**

PROPOSED GRAVEL PIT  
 LOCATED IN N<sup>1</sup>/<sub>2</sub> SEC. 19, T.1 S., R5E  
 GALLATIN COUNTY, MT

T1S

13

R4E  
 R5E

18

JTL Group, Inc.

Tr. 1 COS 772

Tr. 2

W. & L. Kahler

Tr. 1A  
 COS 772A  
 Bessie Roth

J. & S. Krushensky

Naney J. Roth

W. & D. Beasley Tenney

LOS 625

Cameron Bridge Road

D. & P. Lewis

Higgie  
 Tenney

Tr. B-1  
 Kathy Blankensma

CAMERON SPRINGS  
 GRAVEL PIT

Tr. 1, COS 1415B  
 Matthew &  
 Lisa Crow

1000' from  
 permit bndy.  
 (typ.)

Lot 3, Minor Sub. 380  
 Jeffrey W. Meyer  
 Nistler Properties LLC

Tr. B2, COS 1415B  
 Valley  
 Investments, LLC

E<sup>1</sup>/<sub>2</sub>, SEC. 24  
 Robt. & Barbara Marx

24

S. Alaska Road

19

Tr. D, COS 1462  
 Charles C. Page

Tr. E  
 COS 1462

Tr. F COS 1462

TR. 2 COS 2615

TR. 1 COS 2615



SCALE: 1" = 1000' ±

DATE: 10/16/07  
 DRN. BY: S. HELLIER  
 KENAI ENGINEERING